Acumen Data Logger and Trimble AG132 GPS

SIR® 3000 System Settings and User Notes

MN36-213 Rev D

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GPS-Related Setup Information for SIR® 3000 Systems Configured with an Acumen Data Logger and Trimble AG132 GPS

General Setup Information

The Trimble GPS unit sends GPS coordinates in NMEA-183 format out through Port A (on the yellow box) to the serial connection labeled “Data” on the Data Logger (white box).

The Configuration Serial port connection on the Data Logger is connected via serial cable to the Serial Port on the SIR 3000.

Some of the settings on the Trimble GPS unit and the Data Logger need to be adjusted from their default values in order for the logging to work properly with the SIR 3000. These specific settings are described below.

Trimble GPS

GPS data from the Trimble GPS is logged using the Acumen Data Logger. The GPS settings are modified from the front panel on the yellow box. These settings are stored in the GPS memory and once set, they should not have to be adjusted again. We have modified the following settings from their default values on the Trimble GPS:

Communication Port A: (See Trimble manual)

Input: None

Output: NMEA

Output Baud Rate: 9600

Output Message: GGA (disable all others)

Output Rate: ASAP

GPS Config: (See Trimble manual)

Position Rate: 5 Hz

DGPS Config: (See Trimble manual)

Source: OmniStar

Note: OmniStar is a paid subscription service that must be renewed yearly (www.omnistar.com).

Note: GSSI does not sell the Trimble. Please visit www.trimble.com or a local dealer.

Acumen Data Logger Version (rev.) 8.9

The setup information is provided for reference purposes in case of memory corruption.

- The settings on the Acumen Data Logger shipped with the SIR 3000 system are factory preset and should not have to be modified.
- The SIR 3000 serial communication port is automatically set to 115,200 bps when you select SDR from the drop-down menu on the SIR 3000. If there is a need to adjust the Data Logger configuration port baud rate, open the enclosure and use switches S1-1, S1-2, S1-3 and S1-4 to select a baud rate of 115,200 bps for the configuration.

Data Logger Internal Communication Switch Settings as used with the SIR 3000:

S1-1=OFF

S1-2=ON

S1-3=ON

S1-4=OFF

After setting the switches, return the device to its enclosure.

HyperTerminal

The Data Logger data port settings are adjusted using the HyperTerminal communication utility in Windows XP. To start HyperTerminal:

1. Select Start > All Programs > Accessories > Communications > HyperTerminal.
2. A window opens asking for a name and icon for the connection. Specify a name such as “Acumen Data Logger” and press OK.
3. The next window that opens asks for connection information. In the drop-down box labeled Connect Using change the option to COM1 and press OK.
4. The next window allows you to specify port settings. Specify the following parameters:
   - Bits per second: 115200
   - Data Bits: 8
   - Parity: None
   - Stop Bits: 1
   - Flow control: Hardware
5. Then press OK.
6. The HyperTerminal window should now open. Select the **Save** option from the file menu item. You will now be able to use these settings for future sessions.

Checking Data Logger Settings

The steps listed below describe how to check and modify the data port settings:

1. Create a HyperTerminal session using the steps listed above or recall a saved HyperTerminal setup.
2. Connect a serial cable between the Configuration serial port on the data logger and the Serial Port on your computer.
3. Connect the power to the data logger. You should see the Main menu (Figure 1). If you don't see the Main menu, press the **Enter** key. Sometimes you'll need to do this to bring up the screen below.
   - If you see GPS readings scrolling on the screen, this means the unit is in pass-through mode. To disable pass-through mode, press **Shift**-+++.

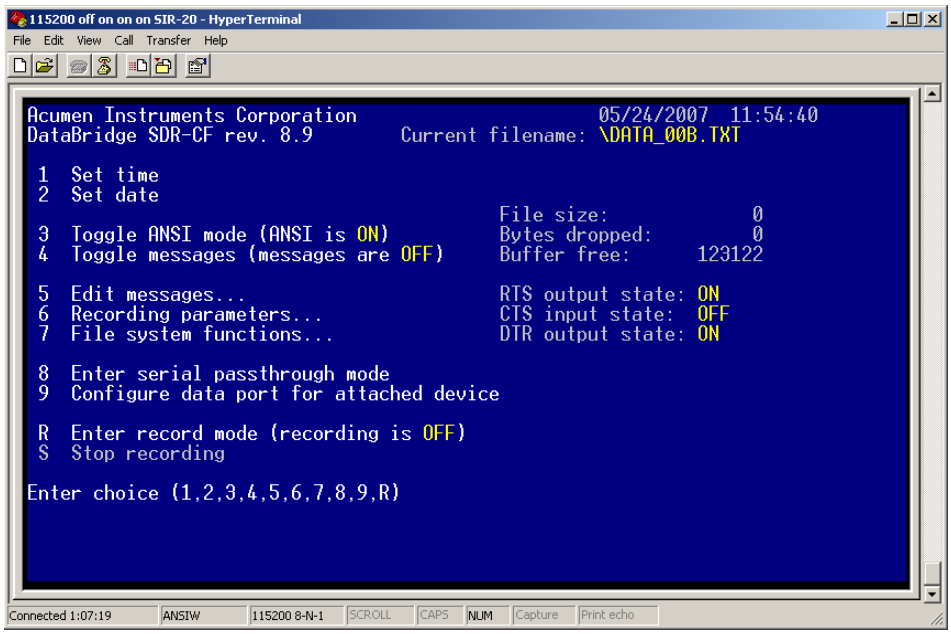

Figure 1: Data Logger Main menu.

4. Press **6** to view the Recording Parameters menu (Figure 2):

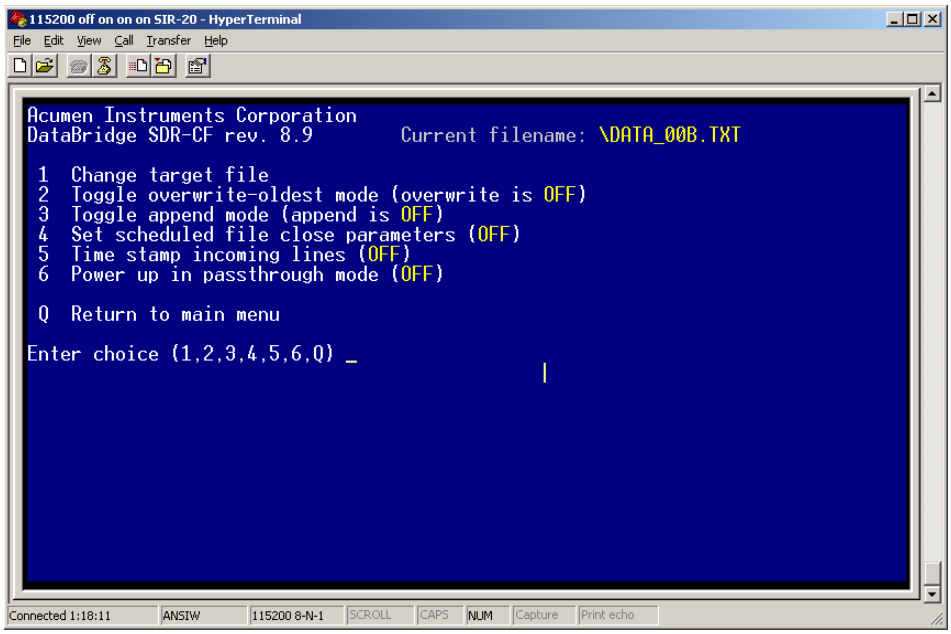

Figure 2: Recording Parameters menu.

5 You can create the Current filename format using menu item **1,** Change target file.

6 Set menu item **2**, Toggle overwrite-oldest mode, to **OFF**.

7 Set menu item **3**, Toggle append mode" to **OFF**.

8 Set"Set Scheduled file close parameters" to **OFF**.

9 Set "Time stamp incoming lines" to **OFF**.

10 Set "Power up in pass-through mode" to **OFF**.

11 Press **Q** to exit the Recording Parameters menu.

12 From the Main menu, press **7** to view the File System Functions menu (Figure 3). Again, ensure the settings agree and press **Q** when done. Keep in mind that Current filename should conform to your file naming convention.

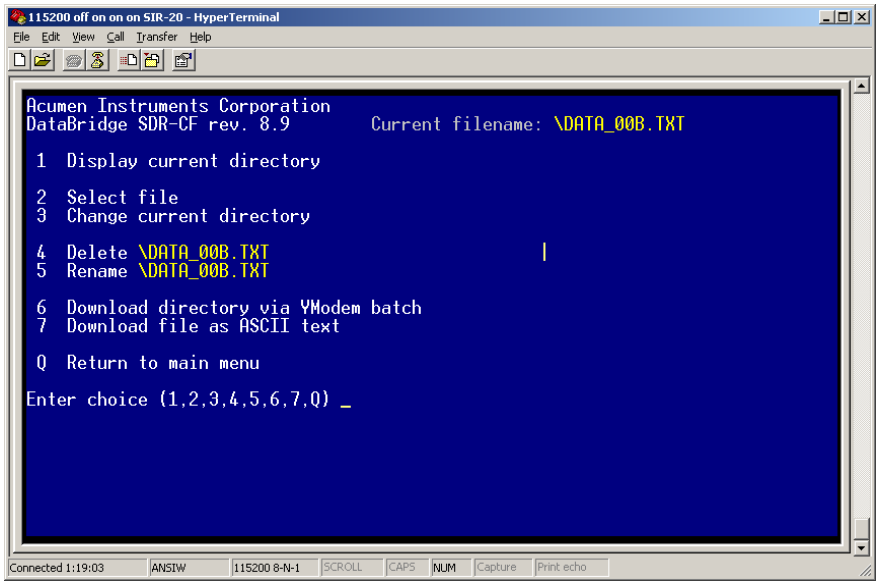

Figure 3: File System Functions menu.

13 Press **9** to view the Data Port Configuration (Figure 4). Be sure the current settings are appropriate for the GPS you are using.

14 Press **Enter** or **ESC** to return to the Main menu.

- If the Current Settings in this window do not match the settings that your GPS system requires, you should make the appropriate changes with respect to the Data Port Configuration (baud rate) as well as the Handshaking settings in order to establish communications between the Acumen data logger and your GPS system. Note, in the previous GPS example, the Trimble AG132 was set to 9600.

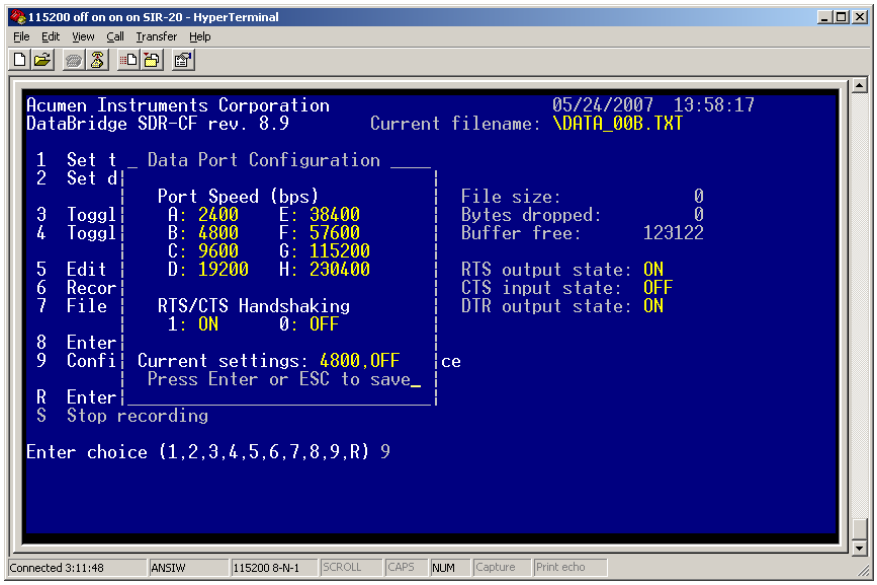

Figure 4: Data Port Configuration menu.

15 When you are finished, select Call > Disconnect from the HyperTerminal menu.

Acumen Data Logger Version (rev.) 1.1.060109

The setup information is provided for reference purposes in case of memory corruption.

The settings on the Acumen Data Logger shipped with the SIR 20 system are factory preset and should not have to be modified. However, if you should need to change these settings, you will have to open it up to make changes to the configuration port.

The SIR 20 ToughBook computer serial communication port is set to 115,200 bps. If there is a need to adjust the configuration port baud rate, open the enclosure and use switches S1-1, S1-2, S1-3 and S1-4 to select a baud rate of 115,200 bps for the configuration.

Data Logger Internal Communication Switch Settings as used with the SIR 20:

- S1-1=OFF
- S1-2=ON
- S1-3=ON
- S1-4=ON

After setting the switches, return the device to its enclosure.

HyperTerminal

Other Acumen data logger settings are adjusted using the HyperTerminal communication utility in Windows XP. To start HyperTerminal:

1. Select Start > All Programs > Accessories > Communications > HyperTerminal.
2. A window opens asking for a name and icon for the connection. Specify a name such as “Acumen Data Logger” and press OK.
3. The next window that opens asks for connection information. In the drop-down box labeled Connect Using change the option to COM1 and press OK.
4. The next window allows you to specify port settings. Specify the following parameters:
   - Bits per second: 115200
   - Data Bits: 8
   - Parity: None
   - Stop Bits: 1
   - Flow control: Hardware
5. Then press OK.
6. The HyperTerminal window should now open. Select the Save option from the file menu item. You will now be able to use these settings for future sessions.

Checking Data Logger Settings

The steps listed below describe how to check and modify data port settings:

1. Create a HyperTerminal session using the steps listed above or recall a saved HyperTerminal setup.
2. Connect a serial cable between the Configuration serial port on the data logger and Serial Port 1 on the Panasonic ToughBook.
3. Connect the power to the data logger. You should see the Main menu (Figure 1). If you don't see the Main menu, press the **Enter** key. Sometimes you'll need to do this to bring up the screen below.
   - If you see GPS data scrolling on the screen, this means the unit is in pass-through mode. To disable pass-through mode, press **Shift**-+++.

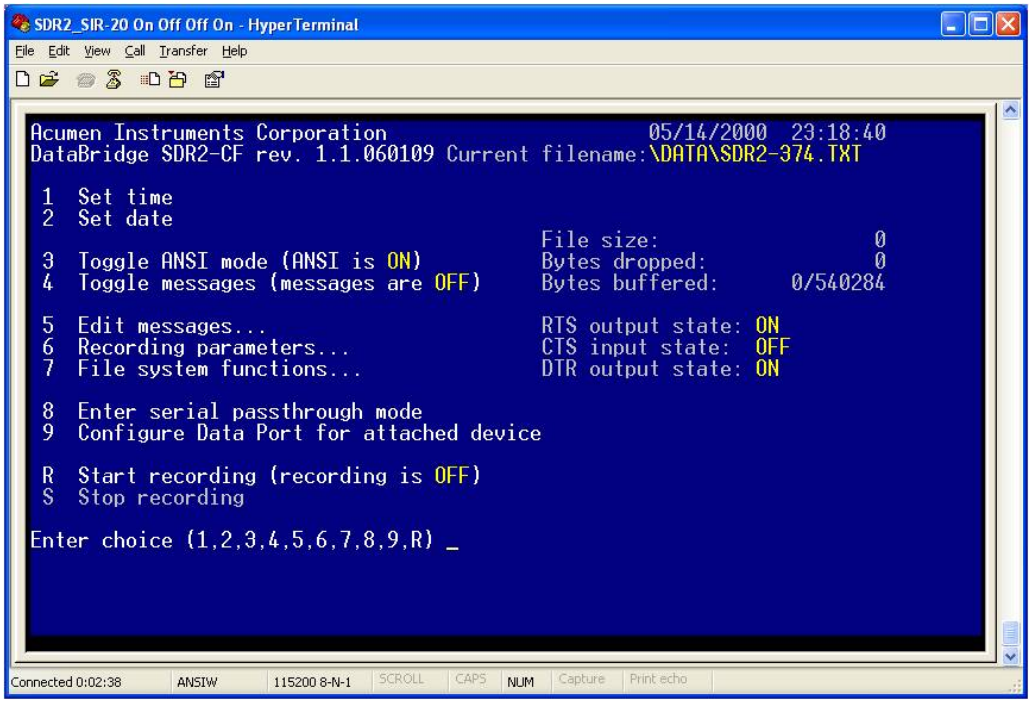

Figure 5: Data Logger Main menu.

4. Press **6** to view the Recording Parameters menu (Figure 2):

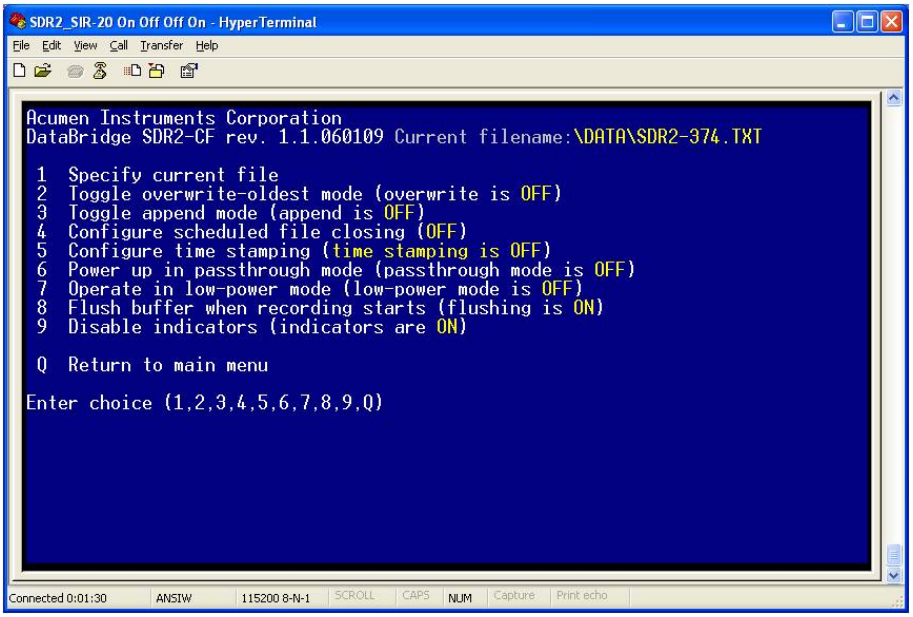

Figure 6: Recording Parameters menu.

5 You can create the Current filename format using menu item 1, Change target file.

6 Set menu item 2, Toggle overwrite-oldest mode, to OFF.

7 Set menu item 3, Toggle append mode" to OFF.

8 Set"Set Scheduled file close parameters" to OFF.

9 Set "Time stamp incoming lines" to OFF.

10 Set "Power up in pass-through mode" to OFF.

11 Set "Operate in low-power mode" to OFF

12 Set "Flush buffer when recording starts" to ON

13 Set "Disable indicators" to ON

14 Press Q to exit the Recording Parameters menu.

15 From the Main menu, press 7 to view the File System Functions menu (Figure 3). Again, ensure the settings agree and press Q when done. Keep in mind that Current filename should conform to your file naming convention.

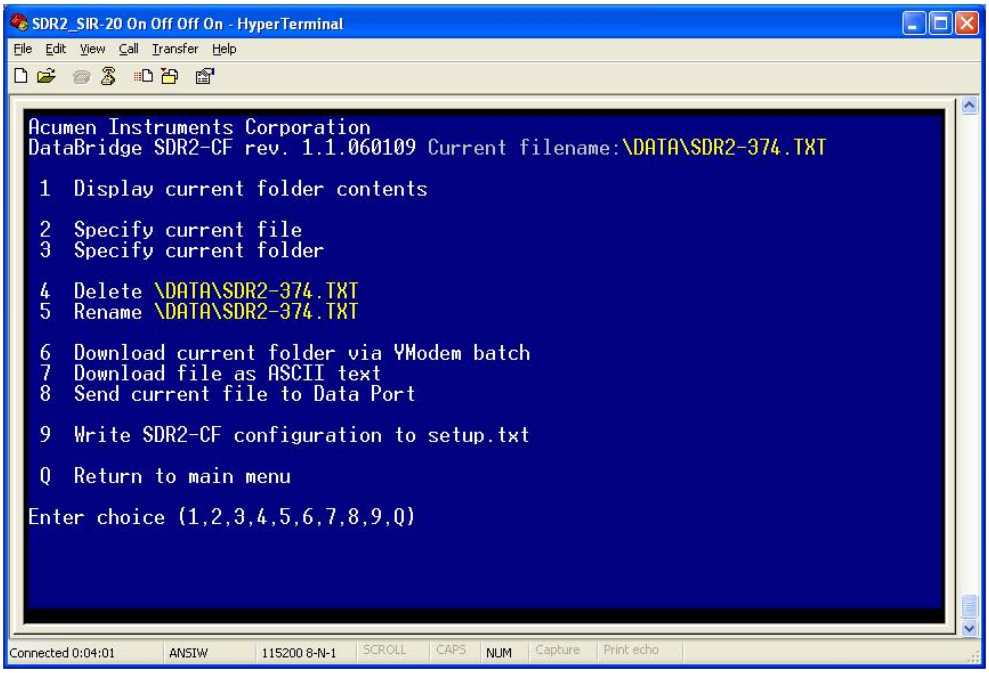

Figure 7: File System Functions menu.

16 Press 9 to view the Data Port Configuration (Figure 4). Be sure the current settings are appropriate for the GPS you are using.

17 Press **Enter** or **ESC** to return to the Main menu.

- If the Current Settings in this window do not match the settings that your GPS system requires, you should make the appropriate changes with respect to the Data Port Configuration (baud rate) as well as the Handshaking settings in order to establish communications between the Acumen data logger and your GPS system. Note, in the previous GPS example, the Trimble AG132 was set to 9600.

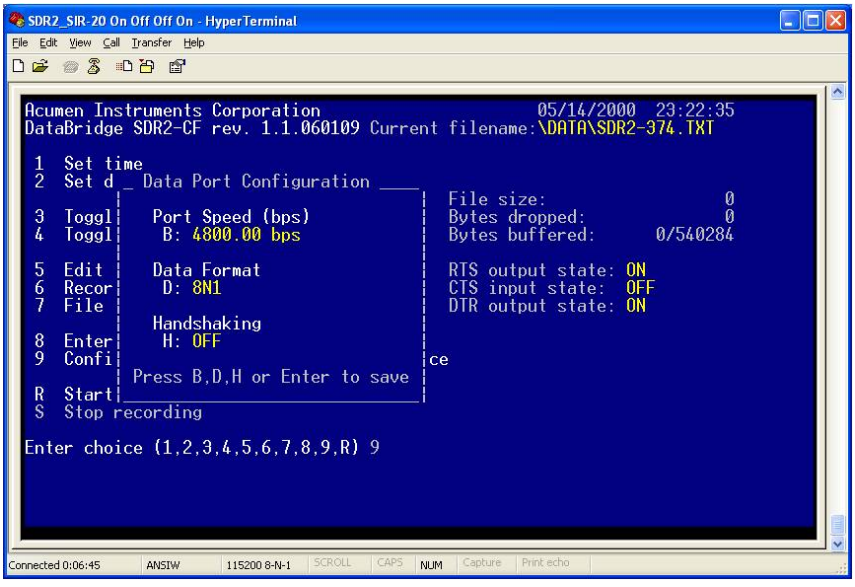

Figure 8: Data Port Configuration menu.

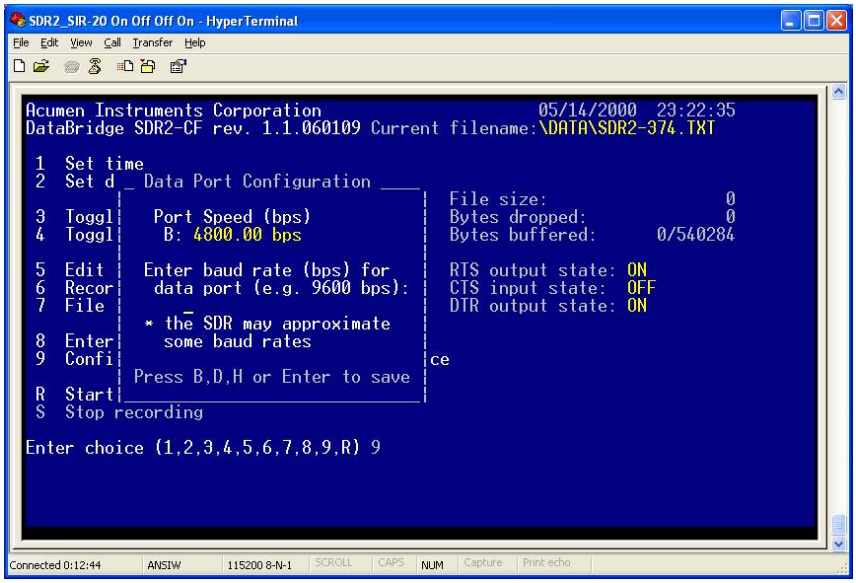

Figure 5: Data Port Configuration menu. 1

18 When you are finished, select Call > Disconnect from the HyperTerminal menu.

Troubleshooting

If you are unable to collect GPS Data:

Symptom 1: Don't see GPS information in the Enable GPS window on the SIR 3000:

1. Check to ensure all of the serial cables are connected and the GPS system and data logger have power. Check to ensure there is an appropriate Compact Flash (Fat16 file format) present and that the data logger can write to it.
2. Check the lights on the data logger. You should see two of them lit up (D and Active). The Active light indicates that power is applied and the unit is ready. The D will flash to indicate you are receiving GPS data from the GPS unit. When you start collecting GPR data, the R will light to indicate you are recording GPS data. If you suspect you are not getting data from the GPS unit, check the GPS unit using HyperTerm to verify that you are sending data out from the GPS unit.
3. If the D and R buttons are lit, check the communication between the data logger and the SIR 3000.

GSSI Contacts

Service and Technical Support:

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softwareTechSupport@geophysical.com - Problems with installation, activation, or apparent defects in RADAN software.

serviceSupport@geophysical.com - Repair of GSSI equipment.